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ABSTRACT

The reciprocal process of engaging in and learning through work was examined. Reciprocity between how workplaces invite individuals to participate in and learn through work (its invitational qualities) and individuals' engagement in the workplace was proposed as a means of understanding how learning through work proceeds. Workplaces' invitational qualities were shown to be shaped by workplace norms and practice and by affiliations (for example, cliques, associations, occupational groupings, and employment status) and to be frequently characterized by inequitable distribution. The distribution of and access to opportunities for practice were shown to be directed toward sustaining the work practice and/or the interests of particular individuals and groups who participate in it. These reciprocal processes of participation in workplace were illustrated through an analysis of the participatory practices of three workers--a union worker, a grief counselor, and a school-based information technology consultant--over a 6-month period. The work of all three individuals was examined through the lens of an analytical framework comprising categories of activities and interdependencies. In all three cases, there was evidence of exercise of individuals' agency in shaping the organization of their work and evidence of new learning opportunities arising from events that were structured by workplace practices and leading to significant new learning. (Contains 34 references.) (MN)

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Co-participatory practices at work

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This seminar reports some initial findings of a study into workplace participatory practices --- the reciprocal process of engaging in and learning through work (Billett 2000). Procedurally, reciprocity between the affordance of the workplace (its invitational qualities) and individuals' engagement in the workplace is proposed as a means of understanding how learning through work proceeds. How workplaces invite individuals or cohorts of individuals to participate in and learn through work can be understood in terms of how they are afforded engagement in activities and interactions that are central to the values and practices of the work practice. These affordances are shaped by workplace norms and practice and affiliations (e.g. cliques, associations, occupational groupings, employment status) in ways that are characterised by contestation and the inequitable distribution of and access to tasks and interactions. The distribution of and access to opportunities for practice are often directed towards sustaining the work practice and/or the interests of particular individuals and groups who participate in it. Engagement in activities and interactions of different kinds may lead to different kinds of learning. Nevertheless, how individuals construe as being invitational what is afforded them and thereby elect to engage in these activities and interactions shapes how and what they learn. This construal is likely fashioned by personal histories or ontogenies, and includes individual subjectivities --- their perspectives that shape how and what is valued and in what ways agency is exercised.

Conceptually, participatory practices help illustrate and clarify the relations between social practice and individuals' cognition. It does this through illuminating the inter-psychological processes that occur at the intersection between cognitive and social experiences (Valsiner & van de Veer 2000). This permits some consideration of relations between individual constructivism and social determinism.

These reciprocal processes of participation in workplace are illuminated through analyses of the participatory practices of three workers over a six-month period. These are those of a union worker, a grief counsellor and an information technology consultant to schools. The findings first illuminate the work of these three individuals through the exercise of analytical framework comprising categories of activities and interdependencies. Then, the bases for participation, performance and learning for each of the three workers are illuminated as are the interactions between individuals and the social practice in which they engage.

The structure of the seminar is planned to be as follows.

1. Learning through work
2. Co-participatory practices
3. Illuminating three work practices (activities and interdependencies)
4. Participatory practices at work
5. Discussion

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Participatory practices at work

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This paper discusses workplace participatory practices --- the reciprocal process of engaging in and learning through work. Reciprocity between the affordance of the workplace (its invitational qualities) and individuals' engagement in the workplace is proposed as a means of understanding how learning through work proceeds. How workplaces invite individuals or cohorts of individuals to participate in and learn through work can be understood in terms of how they are afforded engagement in activities and interactions that are central to the values and practices of the work practice. These affordances are shaped by workplace norms and practice and affiliations (e.g. cliques, associations, occupational groupings, employment status) and are often characterised by contestation and their inequitable distribution. The distribution of and access to opportunities for practice are directed towards sustaining the work practice and/or the interests of particular individuals and groups who participate in it. These reciprocal processes of participation in workplace are illuminated through an analysis of the participatory practices of three workers over a six-month period. These are those of a union worker, a grief counsellor and a school-based information technology consultant. The findings first illuminate the work of these three individuals through the exercise of analytical framework comprising categories of activities and interdependencies. The bases for participation, performance and learning for each of the three workers are then illuminated.

Work, participation and learning

Understanding the requirements for work, and participation in and learning through work may be best understood through an analysis of micro-social processes in workplaces. These processes are proposed as shaping how work is enacted, and assist in understanding the relationship between workplace participatory processes and what is learnt through engagement in work activities. An account of how micro-social processes in workplaces shape activities, actions and learning is advanced here. Little distinction is made here between participation in social practice (such as workplaces) and learning. Consequently, factors shaping participation in work --- workplace participatory practices --- are held to be central to how and what individuals learn through work as well as constituting a component of workplace performance. The need to understand further workplace participatory practices arose from earlier work (Billett 2001a; 2001b) that identified how contributions to learning were shaped by workplace affordances and how they were, in turn, construed as being invitational by individuals or cohorts of individuals in workplaces. Individuals' judgements about workplace affordances shape how they elect to participate at work and, therefore, learn. In this earlier work, is was found that whether learning through everyday work activities or through guided learning experiences in workplaces, how the workplaces afford access to work activities (and in what ways) and the guidance of more experienced co-workers shapes what is learnt.

These findings illuminate aspects of the inter-psychological processes that occur between the social world and individuals as they engage in goal-directed actions and interactions with other workers and other social sources of knowledge. In particular, they identify instances of how micro-social processes shape learning moment-by-moment or as Rogoff (1990) refers to it --- micro-genetically. In recent work (Billett & Boud 2001), differences in workplace affordances were identified across three areas of the same workplace. In terms of the kinds of learning required for performance at work, the environment that was most invitational seemed to be more conducive to engaging learners in the kind of learning required for work. Where the invitational qualities were low, learning was often directed towards self-preservation, deepening cynicism towards the employer and other unintended outcomes. These participatory practices also become a key element of work requirements, as individuals are required to negotiate and practice -- participate -- in these environments. Therefore, in order to advance an understanding of the requirements for work, learning through work and workplace pedagogical practices as well as inter-psychological processes, it is necessary to

illuminate and elaborate these reciprocal participatory practices. In the following, what constitutes workplace participatory practices is outlined and advanced. Then, the procedures and findings of a recent study of the requirements for work and the micro-social processes that constitute the reciprocal workplace participatory practices of work are discussed.

Workplace participatory practices

The contributions to and limitations of individuals' learning their vocational practice through everyday work activities and through guided learning by more expert others has been identified in earlier work (Billett 2001b, Billett & Boud 2001). However, whether considering learning through everyday work activities or through intentional workplace learning activities, reciprocal participatory practices shape this learning. That is, on the one hand, how the workplace affords opportunities for individuals or cohorts of individuals to participate and learn the workplace, and, on the other, how individuals elect to engage in the workplace. Rather than being 'informal', as workplace learning experiences are often and erroneously labelled (e.g. Marsick & Watkins 1990), these experiences are often highly structured and made intentional by workplace norms and practice (Billett 2002). When individuals engage in workplace activities they are invited and expected to learn and practice some selected tasks that contribute to the workplace's continuity. However, the scope and focus of the tasks they are invited to engage in are often directed towards the continuity of the work practice that includes the standing and employment of individuals or cohorts in the workplace. For instance, Bernhardt (1999) among others has identified how in order to safeguard their own employment; full-time workers restricted the activities and learning of part-time employees. Consequently, opportunities are afforded in ways to sustain the work practice and/or particular interests in the workplace. Rather than being 'informal' or 'unstructured', opportunities afforded for learning may be directed towards sustaining the workplace's continuity. Key bases for determining these affordances include the workplace's norms and practices. Workplace practices and affiliations often manifest themselves in the form of contestation that are worked out in terms of the distribution of work activities and support for participation and, hence, learning. The work practice, for instance might be directed to support a division of labour to assist management's control (Danford 1998). Alternatively, the standing and well-being of particular affiliates (Bernhardt 1999) or workplace cliques might be used as bases for shaping how and what activities individuals are permitted to participate in and from which they learn.

The bases of participation in a social practice such as a workplace are rendered particularly salient because of associations between participation in social practices and learning (Rogoff 1995, Lave 1993) through process described as inter-psychological --- between the individual and social sources. As the knowledge required for work practice has social and cultural origins, it needs to be accessed through sources beyond the individual – inter-psychologically (e.g. Vygotsky). Therefore, the kind of workplace activities individuals are permitted to engage in and the quality of interactions accessed shape their learning of socially-derived knowledge (Billett 2001a) as individuals engage in goal directed activities. More than just completing a task, this engagement may induce a lasting cognitive legacy as it likely changes individuals' existing knowledge in some ways. This change arises through the reinforcement or refinement of what individuals already know, or to extend what they know. However, although these goal-directed activities and interactions are shaped by social norms and practices, individuals also exercise their agency in determining how they participate in social practice, such as paid work, and how and what they learn through their engagement. The bases of this agency and its exercise are shaped by individuals' personal histories and their subjectivities. Individuals may well be directed to sustain and extend their own practice in ways that are inconsistent with the workplace's goals however, the outcomes might be quite the opposite, leading to a disassociation and dis-identification with the social practice (e.g. Hodges 1998). So tensions arise when the kinds of participation individuals want is not afforded by the workplace. A workers' quest for promotion and learning the kinds of skills required for promotion might be inhibited by workplace practices. For instance, in one study a worker used his two-way radio to listen to fitters fixing and maintaining parts of a manufacturing plant. He actively sought out the fitters to learn more about their work, as this was work he prized for himself. However, his efforts were frustrated by restrictions on the number of fitters that could be employed, and the safety officer's concern that restricted his attempts to seek the fitters in areas that were off-limits to his work classification

(Billett 1994). So there are potential tensions between the individuals' goals and participatory practices and those afforded by the workplace.

Conceptually, understanding further these reciprocal processes contributes to key discussions within psychological theorising about the relations between individual cognition and the socio-geneses of knowledge (e.g. Cobb 1998, Rogoff 1995, Scribner 1997, Valsiner & Van de Veer 2000). Procedurally, it is necessary to elaborate an understanding of the requirements of work and the impact of workplace participatory practice on work and workers. Currently, in Australia, for instance, no systematic, empirically based method is adopted for decision-making about relative work values across different kinds of work or on the constraints of participation in work. Instead, historical precedents are accepted as bases for decision making about the relative value of work. Moreover, how the participation of contingent workers (e.g. part-time, casual, home-based, non-English speaking) shapes their prospects for engagement, learning and advancement has only recently being considered (Grubb 1996, Hull 1997, Tam 1997). Therefore, understanding more about workplace participatory practices should inform and enhance judgements about work related matters, including regulatory and industrial practices used to make judgements about work value.

From a review of literature on work, work practices and participation in workplaces (Billett 2001a), a scheme was developed to describe work practice, illuminate the requirements for work and predict the kinds of learning likely to arise through workplace participation. The scheme's key organising concepts are categories of *Activities* and *Interdependencies* (see Table 1). Given its focus on the individuals' engagement in socially derived activities, and interactions, this conceptualization has resonance with and may help enrich emerging concepts of the socio-geneses of human cognition. This is because the same conceptual premises also assist understanding how: (a) the social practice (e.g. workplace) affords opportunities, and (b) how individuals' decisions to engage in social practice influences their learning and (c) the interdependence between (a) and (b) make useful contributions to understanding the relations between social practice and individuals' learning through work. In addition, the kinds of activities that individuals are permitted to engage in and how routinely (e.g. what is afforded them) shape their learning. The conceptual basis of this reciprocal process is now elaborated.

Table 1 - Activities and Interdependencies (Billett 2001a)

Activities within work practice are held to be described in terms of their:
Routineness – the degree by which work practice activities are routine or non-routine thereby requiring robust knowledge.
Discretion – the degree by which the scope of activities demands a broader or narrower range of decision-making and more or less autonomous practice.
Intensity – degree by which the intensity of work tasks demand strategies for managing the work load and undertaking multiple tasks simultaneously
Multiplicity – the range of activities expected to be undertaken as part of work practice
Complexity - the degree by which work task decision-making is complicated by compounding variables and the requirement for negotiation among those variables; and
Accessibility (opaqueness of knowledge) - the degree by which knowledge required for the work practice is either accessible or hidden.
Interdependencies within work practice are held to be describable under:
Working with others (teams, clients) – the ways work activity is premised on interactions with others
Engagement - basis of employment
Status of employment - the standing of the work and whether it attracts support
Access to participation - attributes that influence participation
Reciprocity of values - the prospects for shared values
Homogeneity - degree by which tasks in the work practice are homogenous. Similarities may provide for greater support (modelling etc) in development of the ability to perform
Artifacts/external tools - physical artifacts used in work practice upon which performance is predicated

Affordance of social practice

The historically and culturally sourced knowledge required for vocational activities is likely constituted in particular ways in each work practice because of situational factors. That is, the knowledge to be constructed

for effective work performance, the kinds of problems to be resolved and problem solutions, are the product of situational factors and local negotiations (Engestrom & Middleton 1996, Suchman 1996, Wenger 1998), as well as historically and culturally-derived practices that shape and transform vocational activities. Therefore, participation in workplace activities has rich associations with learning shaped by socially-constructed activities and guidance. Just as anthropological accounts link practice with learning (e.g. Pelissier 1991, Lave 1993), both, the cognitive (e.g. Anderson 1993, Shuell 1990) and sociocultural (e.g. Rogoff 1990, 1995) constructivist perspectives advance participation in goal-directed activity as bases of learning. The process of learning advanced in these different accounts is perhaps best explicated through a consideration of micro-genetic development (Rogoff 1990). That is, learning is shaped through moment-by-moment interactions and engagement in activities that are shaped by the micro-social processes of the workplace. Engagement in routine work activities may only reinforce and refine existing knowledge, whereas engaging in new activities and interactions likely develops new knowledge. However, the kinds of activities individuals engage in are the product of the workplace's micro-social processes (Engestrom & Middleton 1996). Therefore, the kinds of participation individuals are permitted and, in turn, elect to engage in are central to understanding the enduring cognitive consequences (i.e. learning) that constitutes the legacy of their participation in social practices such as workplaces. For instance, individuals only able to access routine activities or those who are denied support, may have more limited learning opportunities and outcomes than those participating in new activities supported by experienced co-workers. Moreover, as workplaces can be contested (e.g. Darrah 1996, Hull 1997) the practices that shape the distribution of opportunities may be far from benign. Workplace norms and practices are influenced by workplace hierarchies, group affiliations, personal relations, workplace cliques and cultural practices, which serve to distribute opportunities to act and interact in workplaces (Billett 2001a). It follows that opportunities to participate in and access support and guidance and are distributed in ways that reflect political and power relationships (Solomon 1999, Beriema 2001).

The situational factors and local negotiations that constitute social practices are in constant transformation (Lave & Wenger 1991). In terms of its tasks, goals, interactions, participants and relations, workplace affordances are likely to be constantly changing. This dynamic quality reinforces the salience of the ongoing negotiated relations between individuals and the social practice as both the bases for the workplace's continuity and that of the individual are transformed. More than being once-off sources of knowledge, inter-psychological processes (Vygotsky 1978) are necessarily on-going, reciprocally and micro-genetically constructed throughout individuals' personal histories of encounters with and responses to the social world.

As foreshadowed included in these local negotiations and participatory practices are individuals' subjectivity and agency, which shape how individuals elect to engage with what is afforded them. These are socially-derived through personal histories, thereby positioning the social as an individual phenomenon as much a collective phenomenon. Therefore, individuals' participation in social practice, the processes underpinning learning are interdependent. Learning through engagement in social practices such as workplaces is not a process of socialisation or enculturation as mere reproduction of situational values and practices (Giddens 1984). Individuals' subjectivities are not some individual attribute divorced from the social world. They have social geneses that are shaped through participation in different social practices throughout their life histories. Ultimately, individuals' interpretation of and engagement in social practices and the learning that occurs through that participation will always, in some ways, be unique to their personal histories (Billett 1997) and subjectivities. Moreover, the quality of engagement has direct consequences for learning.

The bases for the independence of individuals' agency and engagement in social practice are multiple, complex and overlapping. Individuals participate simultaneously in a number of social practices (Lave & Wenger 1991). However, the quality of their engagement in these practices is unlikely to be uniform. Full-bodied participation in one social practice may be contrasted by reluctance in another. The degree by which individuals' engagement is full bodied is likely influenced by their values, beliefs and sociocultural background (Mak, Westwood, Barker & Ishiyama 1998). Workers of a South Vietnamese heritage rejected teamwork in an American manufacturing plant, as they believed this work practice reflected the very communistic values and practices they had fled Vietnam to avoid (Darrah 1996). In considering relations between the personal and social, Valsiner (1994) refers to the 'relatedness' between the individuals' values and the mores of the social practice. Salient here are matters of identity and subjectivity. How individuals

view themselves and the construction of their identity may well shape the bases of their engagement and the construal of workplace affordances (Somerville & Bernoth 2001).

Thus, the inter-psychological processes (Vygotsky 1978) --- those between/among social partners, artifacts, symbols and the physical environment shaped by practice --- are reciprocal with individuals making judgments about, and thereby transforming their perceptions of these social sources. Valsiner (1994) refers to this process as the co-construction of knowledge, the reciprocal act of knowledge construction through which both the object and the subject are transformed. In these ways, engagement at work is held to be co-participative: a relationship constituted between how the work practice affords participation and how individuals elect to participate in the work practice --- engage with what is afforded. More than just engagement in work, these co-participative practices are also held to mediate individuals' learning (Billett 2001a).

Illuminating three work practices

The study reported below aimed to illuminate and understand further these workplace participatory practices and their consequences for learning through work. These are illuminated through an analysis of what might be described as micro-social processes comprising the participatory practices of workplaces.

Procedures

The procedures comprising this study are two interrelated sets of activities. The first mapped the requirements for three participants' work practice and the second investigated their workplace participatory practices. Initially, three individuals were selected for participation in the project. The goal was to identify individuals who engaged in different kinds of work and work practice, including at least one who was in some way a contingent worker (i.e. part-time, contractual or home based). The participants in the study were: (i) a trade union official; (ii) a grief counsellor at an institute of forensic pathology; and (iii) an information technology (IT) consultant to five primary schools. The work and work practices of each these workers were quite distinct. Key questions guiding the inquiry were:

(i) In what ways does the social practice of work afford participation?
(ii) What is the range of bases by which individuals participate in the workplace?
(iii) How does co-participation and its consequences differ across workplaces?
(iv) What are the consequences for learning arising from co-participation?

The first phase comprised the appraisal of the scheme of *Activities* and *Interdependencies* presented in Table 1 as a means to describe and illuminate the work the subjects were engaged in, including their participatory practices. Firstly, the three individuals were identified and selected, and permission obtained for their involvement from their workplaces. As noted, they were selected on the basis of their engagement in different kinds of work practice to include: (a) work-based in a situation dependent on teamwork; (b) technological applications; and (c) physical and geographical separation. These kinds of work were selected to appraise the scheme's capacity to describe different kinds of work practice. In addition, the work practices were also selected respectively for the importance of developing shared understanding, knowledge that is difficult to learn, and circumstances where interactions with co-workers may be limited or difficult.

The scheme of *Activities* and *Interdependencies* was used to illuminate the three individuals' work practice over a four-week period through processes of interviews and observations. Whereas both categories can be used to identify workplaces' affordances, the *Interdependencies* were used specifically, to gauge aspects of individuals' engagement in work. Direct observation of work and interviews were used to describe the work practice. Data were gathered and analysed to evaluate the scheme's capacity to: (i) identify the requirements for that area of work practice; (ii) make predictions about the likely learning through their participation; and (iii) examine those factors assisting or inhibiting participation. In sum, the first phase primarily focussed on trialing, evaluating and refining the scheme in three different kinds of workplace settings, including developing and trialing instruments, and data gathering and method of analyses. The second phase comprised a six-month investigation of the workplace participatory practices of the three workers. Commencing, progressive and summative interviews were conducted throughout the six-month period with the participants, using sets of items designed to map the trajectories of both the work practice and

the subjects' participation in their work practice. The interview schedule was used to describe work activities and participatory practices based on the dual concerns of workplace affordances and individuals' engagement.

Data derived from the observations and interviews was analysed using the refined scheme of activities and interdependencies. The workplace data provided rich descriptions of the requirements for performance and factors assisting and inhibiting participation and how they have evolved over a six-month periods. The bases for analysis reported here was to consider the bases for the continuity of the workplace and how these were reflected in their participatory practices and also the continuity of individuals' practice as reflected in their engagement in the workplace.

Findings

The study illuminates and contrasts the three subjects' work practices, the requirements for competent work practice and bases for participatory practice. That is, it identified the requirements for their work, how these individuals participated in work and the kinds of learning they are likely to secure through their work. However, the key focus of this paper is to discuss workplace participatory practices and their association with learning. The data were analysed in terms of bases of continuity, comprising that of the work practice and also individuals' practice.

Continuity of work practice

The bases for the continuity of each work practice first need to be elaborated in order to understanding its goals and bases for permitting participation. The trade union exists because of a need for the industrial and professional representation of its members. To sustain itself, the union has to be positioned to best address members' needs, to advocate for the public sector and the professional standing of workers in that sector. As government policies are central to shaping of the public sector's employment practices, the union seeks to influence government policy. However, because of its party political affiliation, the union is aligned to one of major political parties (Labor). However, this affiliation is complicated when this political party is elected into government and becomes the employer of the majority of the unions' members. This affiliation brings additional internal complications for the union as some of its officers are also members of factions within the political party and are aspirants to be pre-selected as members of legislative assemblies. So there are complex relations between the industrial and professional concerns of its membership, and the union's political affiliations. As the union' industry sector is responsive to and services the community, it is also important to be positioned in key debates and discussions about the sector. In addition, the union plays a role in supporting and sustaining employee unionism. So its key goals are all about sustaining and maintaining itself through advocacy for its membership, the industry sector, the profession it represented and unionism more generally. Given, its focus on working with external agencies and negotiating key agreements, the expertise required within the union is based on capacities to conduct complex negotiations in industrial commissions, with employers, with governments and in professional forums, and often with organizations that are better resourced in making their case. Hence, the loss of three senior staff in recent months leading up to and during the project has tested the capacity of the union to function effectively and strategically. Coincidentally, the internal contestation seems to have intensified, which means that positioning for and support of individuals and their participation in the workplace has become complex. For instance, a campaign to raise awareness in the community about the role of health workers and their workloads, proposed by Anna (our informant) as a highly strategic move, may be countered in attempts to undermine Anna, rather than on the merits proposal being advanced.

The forensic pathology centre, where Jim works as a counsellor, has quite different bases for continuity than the union. The centre has a legislated role, which means its existence is not under threat unless the legislation under which it is constituted is revoked. As long as the state wants coronial inquests, there wil be a role for the centre. So unlike the union, it dos not constantly need to position itself and strive to maintain membership. However, like any other government body it needs to be seen to be performing effectively to maintain its current level of funding and to secure growth (e.g. for an adequate provision of counsellors). However, there are other threats to the centre's continuity in the form of potential privatization of the forensic pathology function and also malpractice. In a climate of outsourcing and cost cutting, the privatization of the centre's functions has been canvassed. Recently, another threat to the continuity of the professional practice

has arisen from earlier practices in other institutes of forensic pathology about the unauthorised access to body parts and their retention without consent. This issue, and non-consented retention of human tissue in hospitals, raised widespread concerns in the community, upon which government has acted in a number of Australian states. The relatively recently established counselling function provided through the center plays an important role in addressing sensitively matters associated with identification of deceased, in processes associated with securing coronial evidence and in assisting those who are grieving as a result of traumatic death. Although not explicitly intended, the counselling service also plays an important role in managing client relations externally. The counsellors took the lead role in responding to governmental inquiries and community concerns about the retention of human tissue for coronial and scientific purposes. Internally, along with an ethics committee, the counsellors' work to make scientific staff aware of the need to consider their responsiveness to and responsibility for changing community expectations.

The five state-funded primary schools for whom the Information Technology (IT) consultant (Aden) works one day a week, play an ongoing role in the community, educating young children. Like many public institutions they have been subject to structural changes. These include the requirement for each school to adopt wider administrative responsibilities and be responsive to innovative practices such as the use of information technology for both administrative and educational purposes. A need to be responsive to departmental initiatives, such as the implementation of a Standard Operating System (SOS) for information technology has become an important performance measure for these schools. As school staff lacked appropriate computing expertise, the five schools have collectively employed Aden to provide these services. Much of Aden's initial work was to assist teachers with routine breakdown and maintenance tasks. So early in his employment, his tenure, as a casual employee, was dependent upon being able to work effectively with teachers and assist them with technology for educational purposes. However, the departmental directives about the implementation of the SOS caused a change in the schools' priorities. As an effectively functioning IT administrative system became a key goal, there was a reduced emphasis on IT support for educational purposes. The requirement for the establishment and maintenance of this system took precedence in the schools that employ Aden.

Continuity of individuals' practice

Anna's reasons for working in the union are highly consonant with the union's goals and bases of its continuity. She has deep and long-founded concern with equity and social justice and comes from a family with a tradition of public service. So there is high level of relatedness with many, but not all of the core values of the work practice in which she engages. An exception is her growing disaffection with political party politics, and of the union's associations with the Labor party that she was once, but is no longer an active member. Her concerns about being closely affiliated with one political party were not shared by many of her colleagues, some of who are closely affiliated to the party and are active members of that party's factions. This complicates her standing in her workplace, as she is unaffiliated, in a system where factional support and numbers can be very potent. Some official are interested in being pre-selected for seats in the legislative assembly. Therefore, their relationship and loyalties are at times ambiguous. Anna's concerns about the union's close association with the party complicate her interactions with others in her workplace, because of divergent premises for the continuity of career paths and personal beliefs. Also, given her strong professional and social justice interests (and disaffection with party politics), her commitment to some of her colleagues' values, which are tied to party affiliations and ambitions is further challenged, when factional politics are used, for what she perceives to be short-term pragmatic and selective goals. However, she is skilled in developing and arguing her case through the union's systems of decision-making forums.

Her capacities to read and write and effectively present cases are well aligned to the procedures for advancing policies in the Union. Through her position she is able to exercise social justice issues and commitment to the public sector. Given the congruence between Anna's personal values, vocation and those of the workplace, it is not surprising that she has not looked elsewhere for work. However, she commented that the quality of her working life that would cause her to consider leaving is the breakdown of personal relations in the workplace. More than the volume, intensity and complexity of her work, the deterioration of workplace relations (affordances) present the key threat to the continuity of her work practice. For instance, she refers to the frustrations about not getting enough support for the campaign to raise public awareness

about the members work conditions. Having stated that it is not so much about being undermined, she continued, *"It's not a personal investment in it It's the fact that ... if you listen to any of the organizers and just how bad it is out there and it's the fact that we have an obligation, that's what were here for. We have an obligation to do something for our members"* So here the tension between Anna' s own vocational concerns and how these are frustrated by workplace factors are illustrated. She also has concerns about how other staff affiliated with her may also be subject to workplace contestation. Anna works closely with some junior staff whom she believes make significant contributions and will do more so in the future as they grow in expertise. However, she is concerned that in the, at times, intensely contested work environment these newer workers may be targeted or marginalised because of their associations with her. In terms of her participatory practice, the work pressure and the shifts in affiliations has meant Anna has to "make more of an effort to contribute more". So despite the fact of her growing workload outside the union and her need to address key policy matters, she needs to maintain her standing and engage closely within the workplace.

Jim, the grief counselor, is engaged in work that he is well-prepared, experienced in, finds interesting, challenging and, at times, rewarding. His interest in working directly with clients and providing a public (free) service is central to his beliefs about his work. He has a strong commitment to the public provision of counselling services and the obligation for governments to fulfil its social obligations. He studied and engaged in social work after several different kinds of employment that followed the completion of his undergraduate degree. These previous forms of employment were unrelated to his current vocational practice. However, despite his commitment, he remains sceptical about and adopts a criticality towards counselling that is open to a questioning of its processes and values. These qualities may be in contrast to the professional medical values and scientific discourses that permeate and are the most influential in the forensic pathology centre. At the beginning of the project, Jim was a casual employee. However, during the period of the project, a permanent position was created which Jim was able to secure. This permanency has permitted Jim to pursue his goals for counseling in a way that is more consonant with his personal and professional beliefs. One of these has been to extend the counseling service he offers to include more face-to-face counseling and to a wider clientele. So, he has extended the scope of the counseling practice through the exercise of his agency in a way that is consistent with his beliefs and values. In considering the (as yet remote) prospect of privatisation, Jim replied that he would not work as a counsellor for a private company because it is antithetical to his values and interests.

For Aden, the work in schools is linked to an environment with which he is familiar. His parents both work in primary education (as a principal and teacher). So all his life he has been involved in discussions about and often physically associated with primary schools. His competence with computers and information technology arose from an interest he developed as an adolescent through having access to a computer at home. While still at school he undertook a period of work experiences that permitted him to extend and demonstrate his competence with computers. His academic performance at school was not strong and it was his father who encouraged him to pursue computing in a vocational college after he left school. He really wanted to be a sports journalist. His father advised him of the widespread use of computers in schools and home and potential growth of employment in this field. His mother secured his first job in a nearby school, which led to subsequent employment in four others. Initially, he viewed this employment as paid work experience, but it has grown to full-time employment. He remains concerned that working in schools as a consultant may exclude him from more interesting, prestigious and highly remunerated work in the corporate world. However, this work suits his familiarity with education and seems to present an environment with which he is comfortable. So although quite content with the work in schools, he could be tempted by an offer from elsewhere, although he is not actively seeking such offers. He claims there is "not much work out there" (his mother found only 10 vacancies in a newspaper recently, he reported). However, he reports that his work is a now a 'proper job'. It has transformed from being a casual appointment, to one that is central to the maintenance of the schools' information system. The job has now been classified within the education system (Technology officer) and he is included in staff listings and has his superannuation paid for by the department. So, while still a contingent worker, the workplace is inviting his participation and involvement more strongly.

The concepts above about individuals' life direction are linked with their subjectivity. That is, the sense of self that individuals projected in their responses was consistent with many aspects of their practice, and in particularly the conduct of their employment. So whereas Anna had never sought out alternative

employment, Jim would not consider working for a private sector company in a counselling role, yet Aden could be tempted by an offer that would allow him to extend his practice further in the kind of corporate direction he cherishes. So there are some identifiable bases associated with individual subjectivity that shape their participation in work activities and actions.

Comparing workplace participatory practices

Diverse participatory practices were identified, across the three informants, which had consequences for the conduct of their work and the practices of others. For instance, in the highly demarcated professional work environment of a forensic pathology centre, the counsellor was permitted to exercise considerable discretion in his work activities, without the need to consult or seek permission. The centre comprises a number of work areas where quite distinct forms of work are conducted (e.g. dissection rooms where the pathologists and mortuary attendants work, laboratories where scientific testing and analysis are undertaken, storage areas for cadavers and others for samples, and counselling facilities, police facilities for investigation and administrative purposes). So the workplace is characterised by distinct divisions of labour premised on the possession of particular specialist knowledge. Professional autonomy is prized in this workplace. Staff designated as professionals enjoy discretion within their demarcated area of work. However, the administrative staff and mortuary attendants would not be granted high levels of discretion. Instead, they are subject to closer supervision, and more limited discretion. Given the relative standing of counselling work, Jim was able to control and direct his work. As noted, early in the six-month period, Jim was a contract staff member. However, towards the end, a new position was created which he was successful in securing. Much of his work might be described as routine (e.g. only the conduct of a few standard functions – identification of cadavers, counselling, assisting with coronial processes). Yet, given the emotionally demanding and distinct character of each event, its requirements go beyond the mere repetition of frequently performed tasks. It also involves him interacting with other staff in order to perform his work functions. This includes the mortuary attendants who provide information, and make the cadavers ready for viewing; working with pathologists to ascertain information to pass on or withhold from next of kin, discussing with the police officers in the centre about the deceased and their relatives. However, there is little boundary crossing because the work functions are so discrete. One incident of boundary crossing did occur. Two groups of the mortuary staff approached Jim to seek advice about a workplace grievance against each other. Jim advised them, even though this was not part of his job description. Later, it came to the attention of a workplace counsellor who objected to Jim's intercession.

The union worker's workplace was far more homogenous in terms of activities to be undertaken, but with far more complex workplace interrelationships that are premised on negotiations, collaborations and consultations. Highly democratic processes of workplace practices are in place in the union. However, there are also cliques and affiliations that were often the basis for negotiations and the working through of contested ideas and practices. Hence, unlike the grief counsellor, Anna's standing and capacity to make decisions was constrained by and tightly interrelated with workplace relations and affiliations that are constantly being renegotiated, and to decision-making processes that are open to scrutiny and contestation. Also, although her work encompassed a broad range of tasks and discretionary actions, her authority was limited by the union Secretary's position. So while Anna enjoys wide (perhaps too wide) discretion in her work, she was denied a commensurate level of authority and decision-making was embedded in negotiated and consensual arrangements, at one level and highly centralised executive authority, at another. So she lacked the capacity to take the kinds of relatively unilateral actions that Jim was able to take in his workplace.

The work requirements of Aden, the IT consultant, were constructed through the interactions with the five schools he serves weekly. As a contingent worker, he seeks to maintain relationships with administrators and teachers in the five schools. However, over the duration of the project there was a change in his tasks and the focus and standing of his work, and also the basis upon which his tenure is premised. As the schools have converted to a departmentally mandated standard system of computer operation and interface, his work has become more focussed on setting upon and maintaining that system. As the implementation of this system became a key strategic goal for the schools, the basis of Aden's tenure has changed. He is now less dependent upon maintaining his tenure through the good will of the teachers and more focussed on his capacity to establish and maintain the SOS in the school. For the schools' administrators this is currently taking

precedence over routine request for assistance for classroom teachers. So, as the goals have changed, so to have the participatory practices and range of tasks he has to be involved with.

So some of the differences in participatory practices are explainable by changes in the requirements for work performance and those brought about by individuals' agencies. Table 2 depicts some of the key bases for affordances and engagement for each of the three participants. As indicated, over the duration of the project, each participant was afforded the opportunity to exercise and extend his or her vocation. However, there are different bases by which they are able to exercise their participation.

Table 2 – Bases of affordance and engagement

Participant	Bases for affordance include:	Bases for engagement include:
Jim - extension of practice	Change to permanent employment Opportunity to exercise discretion Privileging of professional autonomy Clear role demarcations Support from other (senior) counsellor	Professional practice –desire to direct work practice Strong belief in the importance of approach Capacity to enact preferred practice
Barbara – broad campaign	Work role Discretion to embrace a wide scope of activities Democratic workplace practices and values External role Workplace cliques and affiliations	Commitment to public sector and health care Commitment to democratic work processes Experience in the sector Capacities to present and argue a case
Aden – standard operating system	Acceptance of his expertise Enhancing the standing of his work Increased engagement with schools Provision of tasks through which he can develop and contribute to the schools	Expertise in the area of work Familiarity with schools Interest in information technology Level of engagement

Over the six-month span of this study, Jim and Aden experienced expansion in their affordances that permitted them to extend the scope of their practice and their discretion within those practices. Anna on the other hand, although enjoying wide discretion, did not experience an extension of her practices. Instead, she felt the need to give extra time to workplace relations, despite her growing workload. Taking account of the changes in work requirements and participatory practices seems important. Social practice is dynamic as is the relations that constitute them. Therefore, in the next section an attempt is made to map changes arising from each of the three participants, using an instance of change practice for each of them.

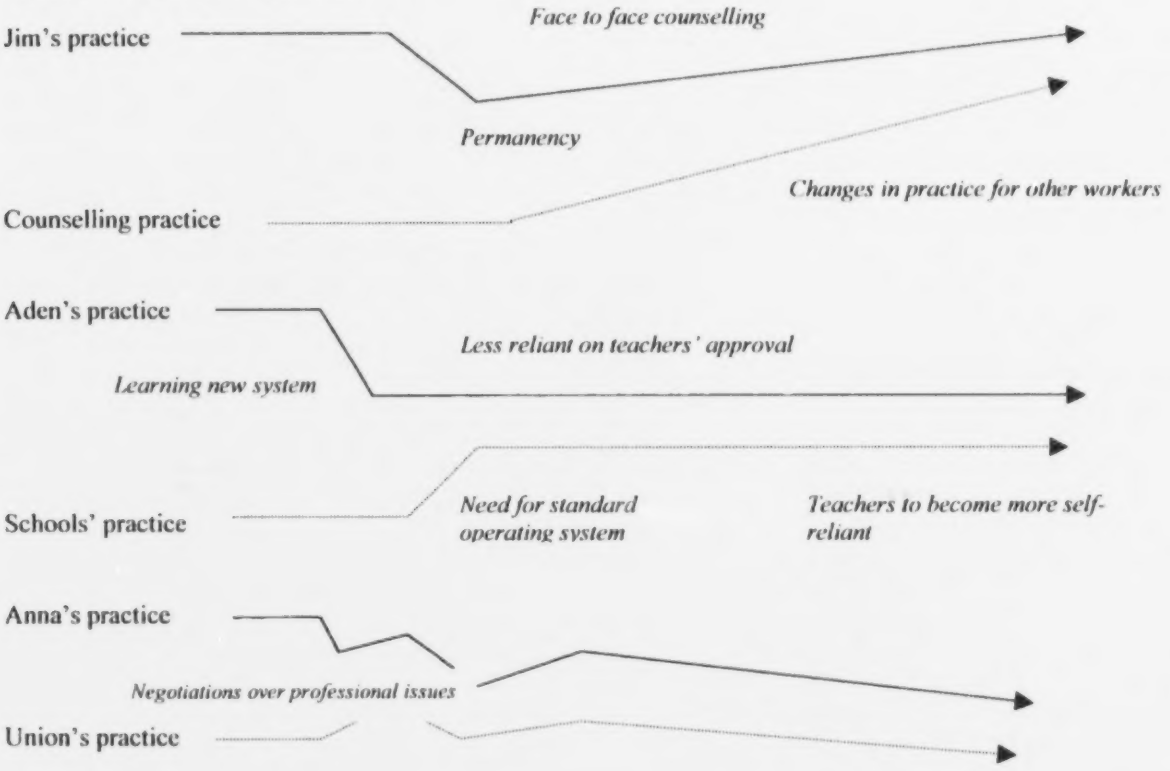
Changes to work and participation

Change in emphasis in the three subjects' work caused changes in the workplace's participatory practices. In Figure 1 below, there is an attempt to depict the trajectories of both the work practices and the individuals' practices, as they changed in relationship to each other over the six-month period. Key changes and consequences for others are also stated in relation to these changes in participatory trajectories. In the first one, with Jim spending more time in face-to-face counselling, administrative staff are now handling other tasks (e.g. initial contacts with clients). However, these staff often find it difficult and distressing to be the first point of contact with recently bereaved clients. Sometimes these staff respond inappropriately through an (understandable) inclination to want to assist a distressed person on phone. This has required Jim to explain to these staff, procedures about contact and his commitments to return the clients' call as soon as possible. He also has had to discuss and make more transparent his schedule so that they can advise clients about his availability. It also means Jim has to spend time with these staff and also others for whom interdependencies are essential. There are other consequences for the work practice arising from Jim's decision to engage in more face-to-face counselling. Firstly, in the workplace there is an increased presence of grieving clients. This means that others in the work area have to be aware of this and behave appropriately. Another change is that Jim routinely advises his clients of their right to appeal the conduct of a post-mortem on the next of kin. This may well lead to an increased incidence of appeals that have consequences for others' work (e.g. forensic pathologists). Nor was he apologetic about the changes he had caused to others' practices. He believes these

changes are about performing counselling in a way consistent with his values and previous practice. Jim is quite unapologetic for the changes that his practice has brought about and although aware of the consequences for other staff, justifies his action in terms of their contribution to his own practice. As foreshadowed, he possesses a strong commitment to and beliefs about his practice as well as the rights of his clients and his obligations to those clients. The changes in the counselling practices at the forensic pathology center are taken very much as being a product of Jim's agency.

In the second set of trajectories, relations with and gaining teachers' confidence was initially important for Aden's work and his standing in the five schools. However, later, when he was given a more strategic role in each of the five schools, his relations with the teachers changed. Both his participation and engagement changed, as did his status. His line of accountability shifted from the teachers to the administration and his task became directly aligned to assisting the school's new strategic direction.

Figure 1 Trajectories of practices



In the third depiction of workplace participatory trajectories, change in the intensity and direction of work, periods of absence to participate in election campaign and changing relations in the workplaces have required Anna to interact and communicate more in the workplace. Her critique of the existing industrial processes has led to intense interactions with some colleagues in the workplace and she has to direct additional effort to workplace political issues. Given the democratic and negotiated bases for decision-making in the workplace, processes of engagement and interaction are important and time consuming. In particular, Anna has argued that the current industrial processes are unable to address many issues associated with the status and conditions of their members. Consequently, a broader campaign is required to raise awareness in the broader community about the conditions these public sector workers and how successive government policies are eroding the crucial public service provided by these workers. Through such a process she hopes to secure broader goals for the membership. However, some colleagues see this approach as being extra-industrial and of marginalising the industrial processes in which their expertise and standing resides. This has

led to periods of intense debate within her workplace. With the recent loss of supportive colleagues Anna is concerned about her capacity to realise these changes to practice.

So, there are dynamic qualities to workplace activities and participatory practices evident across these three workplaces. Jim is able to exercise agency and the changes to his practice and that of the counselling service have become closely aligned. Aden's bases of accountability and continuity have changed and firmed as well. He has clear goals and lines of authority and his vocational interests and the requirements of the workplace have become aligned. Anna's participation continues to develop as staff change and affiliations of interest transform in her workplace. So there is some evidence of associations between changes in work and participatory practices, which illustrate the dynamic social ecology of workplaces and what shapes engagement, participation and learning.

Learning

Each of the three subjects was involved in significant new learning and opportunities to refine what they already knew that were shaped by their participatory practices. Through engaging in more face-to-face counselling that he prefers, Jim the counsellor learnt more about the likely client base he will encounter in this city and their differences from his previous position. For instance, he had less Muslim, but more indigenous clients and the latter are less likely to want counselling, being primarily concerned with the prompt return of the deceased. So his ongoing practice is being refined through day-to-day work. He also had a positive experience with counselling next of kin after an aeroplane crash. This was in contrast to other and earlier involvement with on-scene counselling in other disasters. This experience provided the opportunity for him to identify bases by which such intervention could be constructive (i.e. being able to quickly access next of kin, collaborative working relations with police). Jim's consideration of the global anthrax scare extended his consideration of counselling at the Centre and how they would handle interactions with next of kin and the management of mass fatalities.

For Anna, there was evidence of significant new learning in the consolidation of earlier concerns about how health workers' interests were being addressed in the industrial arena. This learning was consolidated through the opportunity to prepare papers for meetings. Her work in the election campaign, which included time with officers from other unions seem to have contributed and reinforced her views about the detachment from the community of the political party for whom she was assisting. She has also learnt much from her participation in a committee on retirement funds. Although she has worked hard to understand the complexities of appropriately managing these funds, she still feels a novice and not fully understanding the consequences of the decisions she makes. However, one of the roles of the fund's board of which she is a member is to act as a custodian for disputed cases, such as those occurring between competing kinsfolk in the case of an unexpected death. Here, she has found herself able to make a significant contribution, building on the kinds of well-developed advocacy skills she possesses.

Aden's work provided learning opportunities that were mainly in the form of reinforcing how he goes about trouble shooting in the schools in which he works. Week in and week out he was faced with similar tasks and problems, which assist his capacity to be effective in responding to these. His own learning has evolved, as he is using strategies to make efficient many of the routine tasks required to be performed through equipment failure. This use of least effort strategies is a characteristic of expert performance, according to the cognitive perspective. Aden's opportunity for new learning arises from the need to learn how to implement the SOS. This required attendance at a workshop and to interact with staff whose responsibility it is to implement this system. In learning about this system, Aden's role in the schools became to be placed on firmer grounds. Although still contractual, it made his capacities to operate and manage the system across the schools

Learning arising from changes in workplace tasks provided for different bases for participation. Aden developed valued expertise possessed by nobody else in the schools; Jim being able to exercise his preferred mode of conducting his practice; Anna was able to position the debate (direction) of the union by questioning of some its key emphasises.

Workplace participatory practices

The data and their analysis here are used to illustrate how micro-social practices in workplaces reciprocally shape participation and learning. It supports the contention that participation and the learning that arises from

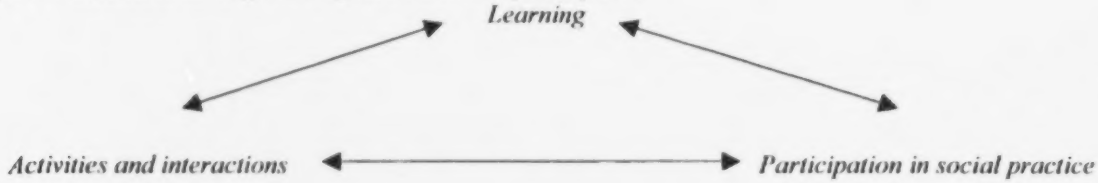
workplace participation is premised on intentions. So while there will always be unintended learning, there is an intentional basis to the workplace experiences that are afforded as well as individuals' participation in those practices (Billett 2002). This intentionality arises from the kinds of micro-social processes identified above. Corresponding with the intentionality of the workplace (its affordances) is the individuals' decision about how they elect to engage in the workplaces. For example, the decision of a grief counsellor to conduct face-to-face, rather than phone-based, grief counselling was a product of his earlier practice. This decision transformed the counselling work and the work of co-workers (because clients were on on-site and for longer periods of time, and also the counsellor was less available, meaning clerical staff had to take calls from distressed next-of–kin) as he was less available, due to the extended periods of counselling. Significantly, the counsellor's change in work practice coincided with his movement from temporary to permanent employment. So, this change in practice illuminates a complex of factors comprising the enactment of the individuals' agency, premised on the capacity for relative autonomous practice that arose from a change in employment status (a workplace affordance), yet which was of a kind not afforded to other workers. In all, this single change transformed work practices, bases of participation and requirements for performance. This example of workplace participatory practices illustrates how opportunities for change, learning and development are distributed across the workplace. For instance, workers with less discretion (e.g. the mortuary and administrative staff) may be subject to the changes of others and not be able to intentionally transform their participatory practices and learning, as others in that workplace were able. So, just as the teachers in the schools experienced a reduced level of technical support when the schools' priorities for information technology changed, the administration in the forensic pathology centre had to learn about Jim's schedule and develop the capacity to take call from distressed next of kin. These examples indicate different bases for the continuity of the practice are exercised to ensure its continuity. These bases reside in its participatory practices.

In all three cases there was evidence of the exercise of individuals' agency in shaping the organisation of their work. This agency was not unassociated with their preferences, beliefs and values – the participants' subjectivities --- how they view themselves in relation to the workplace's activities and tasks. This subjectivity, like individuals' goals and values may shape their agency. The exercise of personal agency varied over time and circumstances, and more so for some of the participants than others. In these ways the study's outcomes illustrate and elaborates the inter-psychological processes occurring through work. Given that micro-social practices play such a salient basis in this analysis it may be timely to consider afresh the social ecology of workplaces (and perhaps revisit some of the earlier work in ecological psychology). As in Somerville and Bernoth's (2001) study, individuals' subjectivity provides an explanatory principle for the direction and shaping of individuals' agency. This agency appeared to be most exercised when there were threats to their subjectivity, and identity, brought about by changes in the workplace or where the individual had the opportunity to exercise that agency.

New activities for all three participants (e.g. considering responses to arising from the Anthrax scare, involvement in an on-scene disaster response, involvement in decision making about retirement funds, implementing the SOS) led to significant new learning. These opportunities arose from events that were structured by workplace practices. They were not ad hoc or incidental, they are central to the workplace's practice and were afforded by workplace circumstances. Some learning is likely to be unintentional on the part of the workplace (e.g. Anna's learning about shifting power structures, her sense of contribution in decision-making as a board member as custodians for superannuation benefits, Jim's capacity to compare disaster-support incidents and Aden's heightened sense of worth). Along the way they also elaborated on refined their knowledge about work that had arisen through everyday work activities.

In conclusion, this initial analysis of the micro-social processes that comprised the three workers' work activities and participatory practices illuminates the multifaceted bases for participation in and learning through work. It also emphasises the complex of contributions that shape microgenetic development – the moment-by-moment learning that occurs through engagement in conscious thought that draws upon historical precedents, cultural requirements, and situation contributions.

Figure 2 –Relations among learning, activities and participation



So when considering learning through work or the development of a workplace pedagogy it is necessary to account for the relations between the kinds of micro-social process that constitute workplace participatory practices and their consequences for micro-genetic development (see Figure 2). Here, it is proposed that these processes are richly intertwined and interdependent. Such propositions and the kinds of evidence advanced above strengthen the interrelationships among learning, doing and participation in social practices. So from this study, evidence of the relations between workplace participatory practices and learning is advanced as being richly associated. Consideration of one, suggests the need to consider the others.

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